

REMARKS

Status of the Claims

Claims 1, 2, 4 and 12-21 are pending.

Claims 3 and 22-24 have been cancelled.

Claims 5-11 were subject to a restriction requirement and have been cancelled in a previous amendment.

Claim Rejections: 35 USC § 103(a)

In [3] of the Office Action, claims 1-4, 14-21 and 24 were rejected under 35 USC § 103(a) as being unpatentable over Davis et al. (GB 2 326 017A hereinafter Davis) in view of Sugita et al. (U.S. patent 6,455,179 hereinafter Sugita).

This rejection is respectfully traversed for the reasons set forth in Amendment B, filed November 3, 2008, incorporated herein by reference, and the following reasons.

The Examiner states that “Davis fails to explicitly disclose that the porous electrode has a discrete gas diffusion layer” and goes on to assert that “it would have been obvious for one of ordinary skill in the art to include a gas diffusion electrode of Sugita to the porous electrode of Davis because this would ensure an efficient entry passage for the gases”.

Although it is true that Davis does not disclose a GDL, Davis does far more than that, Davis fails to employ a GDL because that would run contrary to the entire theory and execution of his device.

Furthermore, applicants respectfully disagree that the combination would be made because Davis stresses throughout his disclosure that cost, size and complexity are all to be reduced to the greatest extent possible. Accordingly, **Davis teaches away** from the addition of GDL's because of their cost, added complexity and impact on increasing the size of the fuel cell device.

In particular, on page 1, lines 29-31 Davis discloses that electrodes are to be porous to assist in gas diffusion. Davis then goes on to describe the significant expense of machining a network of channels 27 into a carbon separator plate (page 2, lines 27-29) and proposes a low cost separator plate (page 3, lines 6-7) and discloses inexpensive means to provide a plurality of channels or grooves 37 in the surface of the plate **to provide for gas distribution to the anode and the cathode.** (Emphasis added).” Please see page 5, lines 26-33.

Furthermore, Davis stresses that low cost thermoplastics should be used to result in a lower cost fuel cell assembly (page 5, lines 19-21).

Thus, it is **eminently clear** that Davis has both (a) appreciated and **already provided** sufficiently for the necessary gas diffusion for his device and does not need nor desire an additional GDL and moreover (b) would consider such an additional element and its cost **entirely in opposition and contrary** to his stated goal of providing **a low-cost simple fuel cell device.**

Davis culminates his disclosure, just prior to the claims directed to his device, by stating that the bipolar plate “utilizes low cost materials” and that the “size of the assembly is reduced along with the cost”.

Thus, in summary, the addition of the GDL of Sugita would destroy two of the stated goals of Davis, to reduce both size and cost, while also being superfluous because Davis has already considered and provided for sufficient and adequate gas diffusion in his device.

The Examiner’s assertion for the combination of Davis with Sugita is in complete contradiction to the teachings of Davis, would destroy what Davis has set out to accomplish, and be a superfluous addition.

It is respectfully submitted that Examiner has failed to make a prima facie case of obviousness in view of the applied references and that the rejection should be withdrawn.

The deficiencies of the combination, which as asserted above would not be made by one of ordinary skill in the art, are well described in the prior arguments incorporated by reference herein.

Accordingly removal of the rejection and allowance of claims 1, 2, 4 and 14-21 is respectfully requested.

In [4] of the Office Action, claims 12 and 13 were rejected as being unpatentable under 35 USC § 103(a) over Davis in view of Sugita as applied to claim 1, and further in view of Takagi et al., (U.S. patent 7,008,991 hereinafter Takagi). The Examiner asserts that it would be obvious for a person skilled in the art to optimize the percentages of maleic anhydride polymer and liquid crystalline polymer of Takagi through routine experimentation as the weight percentages as recited is a results effective variable.

This rejection is respectfully traversed for the reasons set forth in Amendment B, filed November 3, 2008, incorporated herein by reference, and the following reasons.

As stated above, Davis stresses that low cost thermoplastics should be used to result in a lower cost fuel cell assembly (page 5, lines 19-21).

Accordingly, Davis **teaches away** from the use of a composition such as that disclosed in Tagaki, which by virtue of its considerable **cost and complexity** is precisely the kind of change or modification that one of ordinary skill when reviewing the disclosure of Davis **would avoid**.

The deficiencies of the combination of Davis and Sugita, and now Tagaki, which as asserted above would not be made by one of ordinary skill in the art, are well described in the prior arguments incorporated by reference herein.

In view of the foregoing, allowance of claims 1, 2, 4 and 12-21 the above-referenced application is respectfully requested.

Respectfully submitted,

/BRIAN C. JONES/

BRIAN C. JONES
ATTORNEY FOR APPLICANTS
Registration No.: 37,857
Telephone: (302) 992-4601
Facsimile: (302) 992-2533

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